

Claims

1. An integrated particulate material transfer system adapted to be towed and activated by a motive power source, namely an agricultural tractor; said device including:
 - an elongated horizontally disposed platform; said platform being supported at one end by at least one retractable transport wheel, and at an opposite end, by a movable hitch; said hitch adapted to be pivotally connected to said motive power source;
 - pivottally attached ramps; said platform containing transfer means for conveying particulate material from the platform to a main transfer conveyor; wherein said motive power source and said integrated material transfer system, when used together, are always connected for both operation and transport.
2. An integrated mobile unloading and conveying device for particulate material adapted to be towed and activated by a power source, said device including:
 - an elongated horizontally disposed platform; said platform being supported at one end by a pair of retractable transport wheels, and at an opposite end by a hingedly connected hitch; said hitch adapted to be mounted to said power source;
 - a rearward and a forward pair of foldable ramps; said ramps being transverse to said platform, parallel to one another, and extending outwards from both sides of said platform;
 - at least one first horizontally disposed transfer conveyor located within said platform, and adapted in operation to move particulate material rearwardly within said platform;

said at least one transfer conveyor being connected by articulated joints to at least one obliquely disposed second transfer conveyor;

said at least one second transfer conveyor being connected at a remote end to a main elevating conveyor by a pivotal joint;

said second transfer conveyor in operation adapted to discharge particulate material into said main conveyor;

and said platform further including on its upper side a particulate material receiving aperture adapted to receive contents of a vehicle transporting particulate material;

said aperture being located between said forward pair and said rearward pair of ramps;

wherein in operation, when said hitch is raised at its forward end and said transport wheels are retracted, said platform is in an operating unloading position adapted to receive and convey particulate material; and when said transport wheels are extended and said hitch is lowered at its forward end, said device can be transported to another location such that a remote end of said main conveyor can be positioned to discharge its contents into a desired storage facility.

3. A device as claimed in Claim 2 wherein said ramps are foldable for transport.
4. A device as claimed in Claim 2 wherein said transport wheels, said conveyors, said ramps, and said hitch are activated from the power/towing source.
5. A device as claimed in Claim 2 wherein said hitch and said transport wheels are connected by a mechanical link, adjusted by turnbuckles, such that when said wheels are retracted, said hitch is raised, and when said wheels are extended, said hitch is lowered.
6. A particulate material unloading system including:

a rigid platform resting on the surface of the ground, in an operational unloading position, for supporting a particulate material transporting vehicle where the longitudinal axis of said platform coincides with the direction of travel of a motive power source when said motive power source is moving in a straight line;

said platform being pivotally attached to said motive power source for moving said particulate material unloading system from one location to another;

said platform being capable of receiving particulate material discharged from said particulate material transporting vehicle;

a main particulate material conveyance device pivotally attached to said platform on the opposite side to which said motive power source is attached to said platform such that a longitudinal axis of said main particulate material conveyance device is substantially aligned with said longitudinal axis of said platform;

said main particulate material conveyance device being capable of delivering said particulate material to a holding bin; and

at least one secondary particulate material conveyance device for transferring said particulate material received by said platform to said main particulate material conveyance device, such that said platform remains connected to said motive power source and said main particulate material conveyance device during unloading and also when moving said particulate material unloading system from one area to another.

7. A particulate material unloading system as in Claim 6 where said motive power source provides power required to transport the particulate material unloading system from one location to another and operates both said main and secondary material conveyance devices.
8. A platform as in Claim 6 having upper, lower and side surfaces for receiving and containing said particulate material.
9. A platform as in Claim 6 that has a semi-open upper surface allowing said particulate material to flow into said platform, and to said secondary material conveyance device.
10. A platform as in Claim 6 where said platform has foldable ramps on both sides of said platform to reduce its transporting dimensions.
11. A platform as in Claim 10 where said ramps are hydraulically foldable to reduce transport dimensions.

12. A platform as in Claim 9 where power to hydraulically fold said platform to reduce transporting dimensions is provided by said motive power source.
13. A platform as in Claim 6 constructed from steel.
14. A main particulate material conveyance device as in Claim 6 that is a screw conveyor.
15. A main particulate material conveyance device as in Claim 6 that is a belt conveyor.
16. A main particulate material conveyance device as in Claim 6 that is a bucket elevator.
17. A main particulate material conveyance device as in Claim 6 that is a paddle conveyor.
18. A secondary particulate material conveyance device as in Claim 6 that is a screw conveyor.
19. A secondary particulate material conveyance device as in Claim 6 that includes multiple screws.
20. A secondary particulate material conveyance device as in Claim 6 that is a belt conveyor.
21. A secondary particulate material conveyance device as in Claim 6 that is a paddle conveyor.
22. A system as in Claim 6 where said motive power source provides power to said secondary conveyance device and said main particulate material conveyance device.
23. A system as in Claim 6 that includes a truck positioning indicator.
24. A device as claimed in Claim 2 wherein said at least one secondary particulate conveyance device includes two first transfer conveyors and two second transfer conveyors.